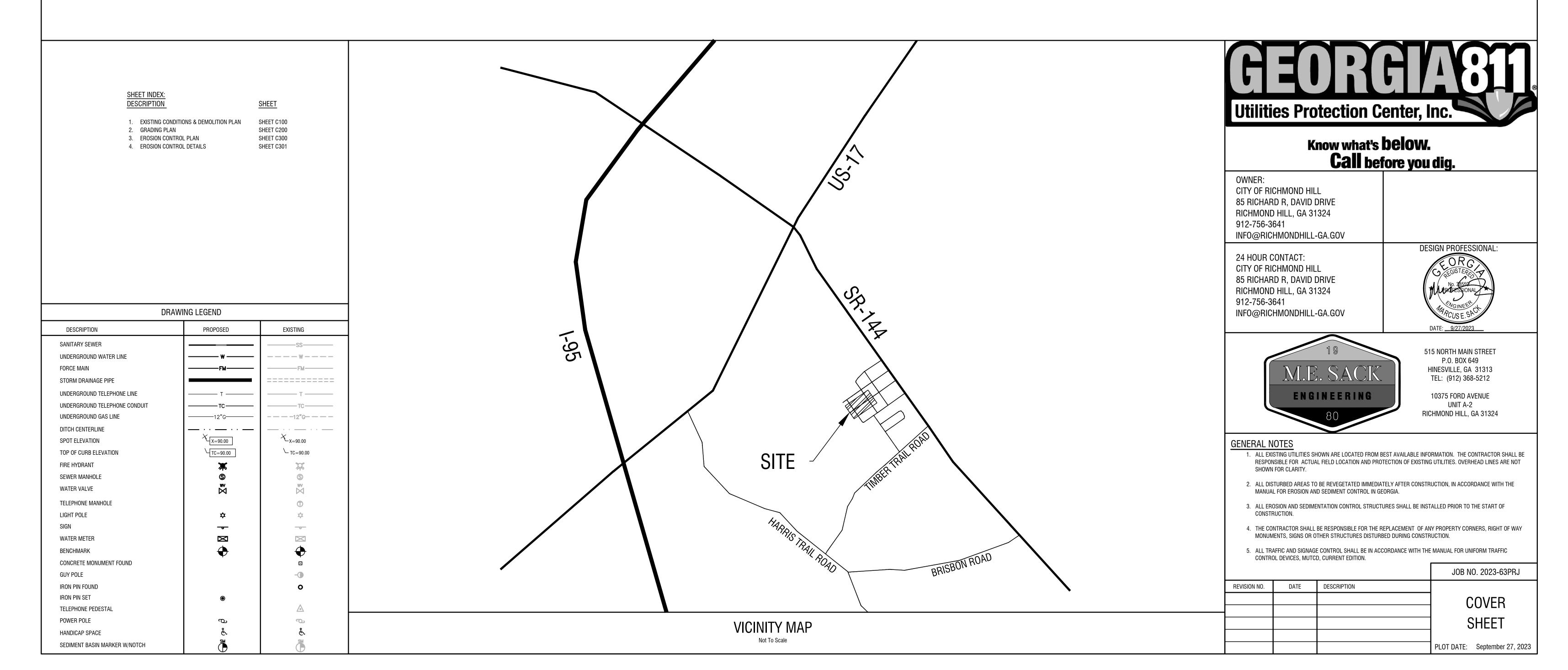
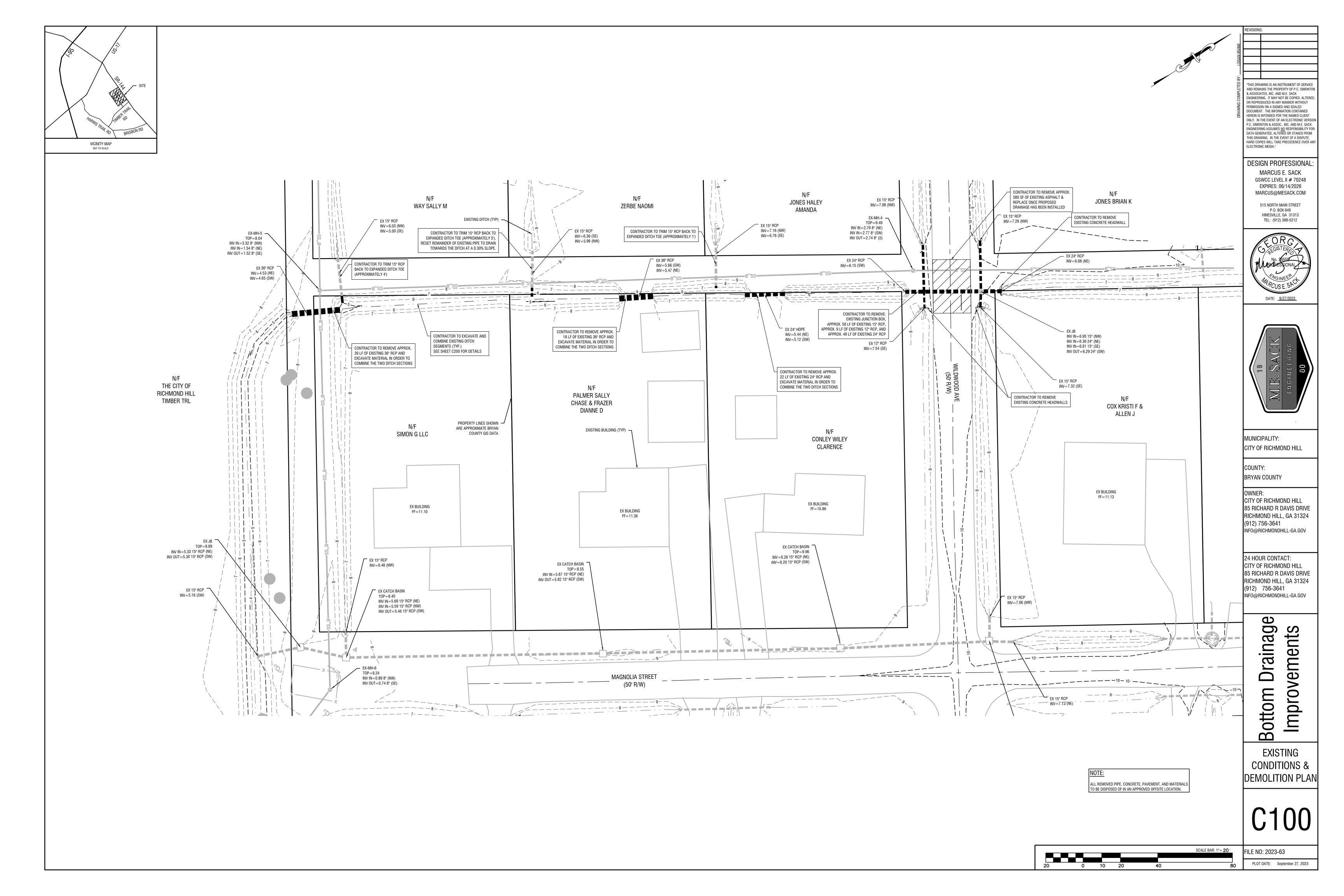
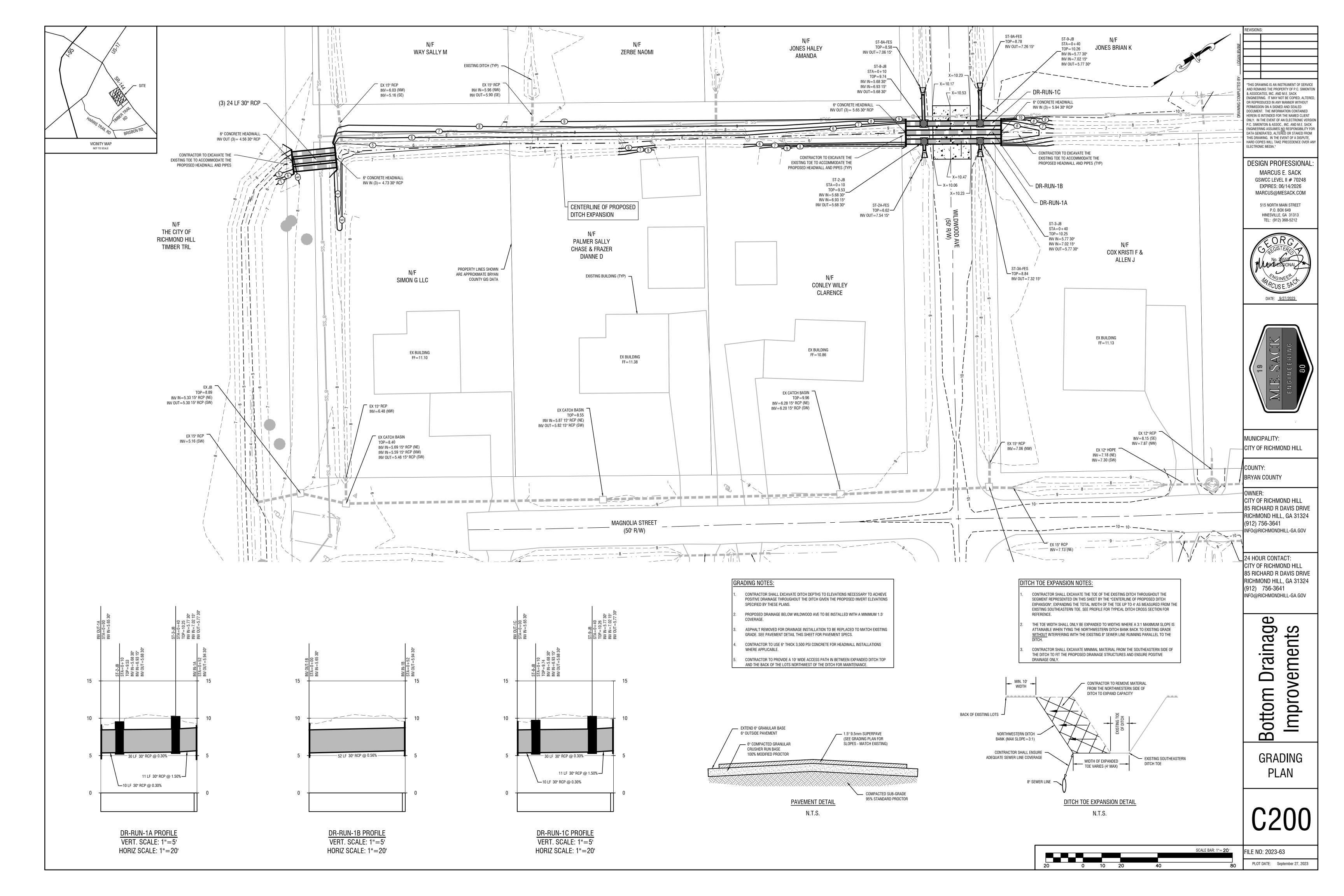
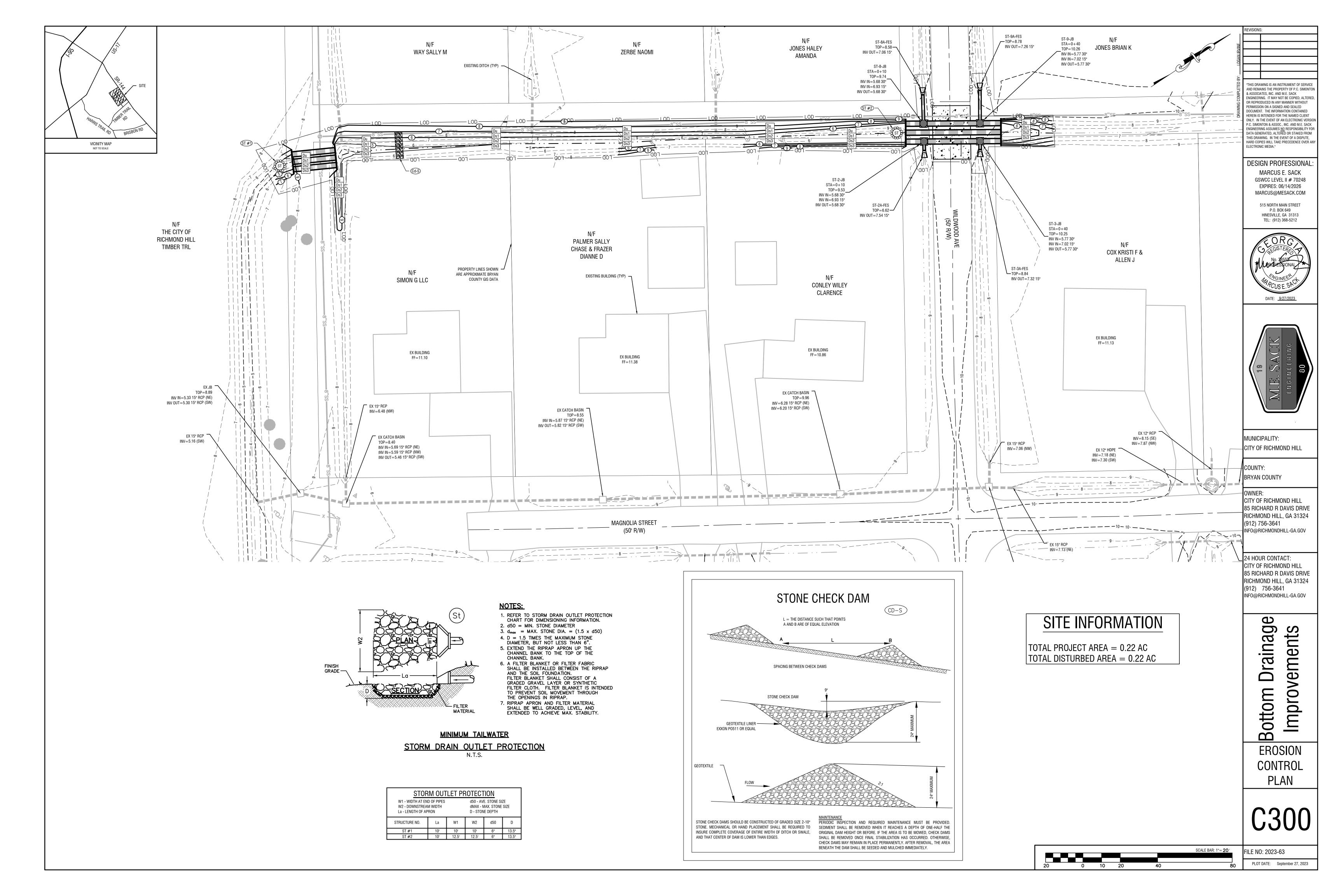
BOTTOM DRAINAGE IMPROVEMENTS FOR THE CITY OF RICHMOND HILL BRYAN COUNTY, GEORGIA DATE: MAY 31, 2019









Ds1 DISTURBED AREA STABILIZATION (W/MULCHING ONLY)

SPECIFICATIONS

A. For temporary protection of critical areas without seeding. This standard applies to grades or cleared areas which may be subjected to erosion for 6 months or less, where seeding may not have a suitable growing season to produce an erosion retardant cover, but which can be stabilized with a mulch cover.

Site Preparation

1. Grade, as needed and feasible, to permit the use of equipment for applying and anchoring mulch.

2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers. 3. As needed and feasible, loosen compact soil to a minimum

depth of 3 inches.

1. Dry straw or hay — spread at a rate of 2 1/2 tons per acre. 2. Wood waste, chips, sawdust or bark — spread 2 to 3 inches deep (about 6 to 9 tons per acre).

3. Erosion control matting or netting, such as excelsior, jute, textile and plastic matting and netting — applied in accordance with manufacturers recommendations.

4. Polyethylene film — secured over banks or stockpiled soil material for temporary protection.

Applying and Anchoring Mulch

1. Apply straw or hay mulch uniformly by hand or mechanically. Anchor as appropriate and feasible. It may be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." The disk may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. the edges of the disk should be dull enough not to cut the mulch but press it into the soil leaving much of it in an erect position.

Straw hay mulch spread with special blower—type equipment may be anchored with emulsified asphalt (Grade AE—5 or SS—1). The asphalt emulsion must be sprayed onto the mulch as it is ejected from the machine.

Use 100 gallons of water per 2. Spread wood waste uniformly on slopes that are 3:1 and flatter.

No anchoring is needed.
3. Commercial matting and netting. Follow manufacturer's specification included with the material.

4. Apply asphalt so area has uniform appearance. (Note: Use in areas of pedestrian traffic could cause problems or "tracking in" or damage to shoes, clothing, etc.)

B. To conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bar areas on lawns.

Mulching Materials
Use one of the materials given below and apply at thickness indicated.

Ma	<u>terial</u>	Dept	
1.	Grain straw or grass hay	6" to 1	
	Pine needle	4" to 6	
3.	Wood waste	4" to 8	
	(sawdust, bark, chips)		
4.	Shredded residues	4" to	

(crops, leaves, etc.) 5. Completely cover area with black polyethylene film and hold in place by placing soil When using organic mulches, apply 20—30 pounds of nitrogen in addition to the normal amount needed for plant growth to offset the tie up of N by decomposition of mulch

MULCHING RATES FOR PERMANENT COVER

TYPE OF	RATE PER	NOTES
MULCH	ACRE	
Dry straw	2 Tons	Free of weed seeds.
Dry hay	2.5 Tons	Free of weed seeds.
Wood Cellulose	500 lbs. 1000 lbs.	Slope less than 3/4:1 Slope greater than 3/4:1
Wood Pulp Fiber	500 lbs. 1000 lbs.	Slope less than 3/4:1 Slope greater than 3/4:1
Sericea Lespedeza Hay	3 Tons	Containing mature seeds.
Pine Straw or Bark	3 inches thick	For bedding. Not for seeding.
Bituminous treated roving	See DOT specs.	Use on slopes. in ditches, or dry waterways.

- Mulching is not required for temporary grassing.
 Mulch shall be applied to cover 75% of the soil surface.
- 3. Sod does not require mulch.

Du DUST CONTROL ON DISTURBED AREAS

<u>PURPOSE</u>

A. To prevent surface and air movement of dust from exposed surfaces.
 B. To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

Temporary Methods

1. Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet.

2. Mulching — See Ds1— Disturbed Area Stabilization (with Mulching only) 3. Vegetative Cover — See Ds2 — Disturbed Area Stabilization (with Temporary Seeding)

Permanent Methods

1. Permanent Vegetation — See Ds3 — Disturbed Area Stabilization (with Permanent Vegetation)

Ds2 SPECIES AND PLANTING SCHEDULE

	BROADCAST	<u>PLANT</u>	NG DATES BY RESOURCE	
<u>SPECIES</u>	RATES 1/ - PLS 2, PER PER	RESOURCE AREA 3/	AREAS *	<u>REMARKS</u>
	ACRE 1000 S.F		JFMAMJJASOND	
RYEGRASS, ANNUAL ALONE	40 lbs. 0.9 lb.	M-L P C		227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.

* (DARK LINES REPRESENT OPTIMUM DATES, GRAY LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.)

Ds3 SPECIES AND PLANTING SCHEDULE

<u>SPECIES</u>	BROADCAST RATES 1/ - PLS 2/ PER PER	PLANTING DATES BY RESOURCE RESOURCE AREA 3/ AREAS *		<u>SPECIFICATIONS</u>
	ACRE 1000 S.F.	·	JFMAMJJASOND	
BERMUDA, COMMON HUILLED SEED ALONE WITH OTHER PERENNIALS	10 LBS. 0.2 LB. 6 LBS. 0.1 LB.	P C		1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA, COMMON		P	JFMAMJJASOND	
UNHULLED SEED WITH TEMPORARY COVER WITH OTHER PERENNIALS	10 LBS. 0.2 LB. 6 LBS. 0.1 LB.	С	J F M A M J J A S O N D	PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA SPRIGS COASTAL, COMMON, MIDLAND, OR TIFT 44 COASTAL, COMMON,	40 CU. FT. 0.9 CU.FT. OR SOD PLUGS 3' X 3'	M-L P		A CUBIC FT. CONTAINS APPROXIMATLY 650 SPRIGS. A BUSHEL CONTAINS 1.25 C.F. OR APPROXIMATLY 800 SPRIGS. SAME AS ABOVE.
TIFT 44		C C	JFMAMJJASOND	SOUTHERN COASTAL PLAIN ONLY
			* (DARK LINES REPRESENT OPTIMUM DATES, GRAY LINES INDICATE PERM	ISSIBLE

BUT MARGINAL DATES.)

FERTILIZER REQUIREMENTS

TYPE OF SPECIES	1 — 1 11 1		RATE	N TOP DRESSING RATE
Cool season First Second Maintenand		6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/ 2/ - 30
Cool season grasses legumes	grasses Second		1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ -
Ground covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	- - -
Pine seedings	First	20-10-5	one 21—gram pallet per seeding placed in the closing hole	_
Shrub leapedeza	First Maintenance	0-10-10 0-10-10	700 lbs./ac. 700 lbs./ac. 4/	_
Temporary cover crops seeded clone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/ 6/ 50-100 lbs./ac. 2/ 30 lbs./ac
Warm season grasses and legumes First Second Maintenance		6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac. 6/

- 3/ Apply in 3 split applications. 4/ Apply when plants are pruned.
- 5/ Apply to grass species only.
- 6/ Apply when plants grow to height of 2 to 4 inches.

		spring following seeding.	
2/	Apply in	split applications when high rates are used.	
z /	من برامم۸	7 onlit annications	

GEORGIA **UNIFORM CODING SYSTEM**

FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES GEORGIA SOIL AND WATER CONSERVATION COMMISSION

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM		J	A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION	90	7	Improving, constructing or stabilizing an open channel, existing stream, or ditch.
<u>©</u>	CONSTRUCTION EXIT			A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION		ض ^{نو}	A travelway constructed as part of a construction plan including access roads, subdivision roads, porking areas and other on—site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL	= 1 =	*	A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION		EXTERNITE OF	An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy—duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE	1		A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING	&		A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION	W	IJ	Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE		© /	Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form guillies.
Lv	LEVEL SPREADER		\rightarrow	A storm flow outlet device constructed at zero grade across the slope whereby concentrated runoff may be discharged at a non-erosive velocity onto undisturbed areas stabilized by existing vegetation.
Rd	ROCK FILTER DAM		5	A temporary stone filter dam installed across drainageways or in conjunction with a temporary sediment trap.
Re	RETAINING WALL	· ·		A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING		R)~-	A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1)	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles or a silt fence.
Sd2	INLET SEDIMENT TRAP			A temporary protective device formed at or around an inlet to a storm drain to trap sediment.
Sd3	TEMPORARY SEDIMENT BASIN	20		A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER		(SK)~~	A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM			Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
(Sr)	TEMPORARY STREAM CROSSING		- F	A temporary bridge or culvert—type structure protecting a stream or watercours from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION		(S)	A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING		⊢S⊔-I	A rough soil surface with horizontal depressions on a contour or slopes left in roughened condition after grading.
Tc	TURBIDITY CURTAIN		1 10	A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Тр	TOPSOILING		% 0	The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
	TREE PROTECTION	0		To protect desirable trees from injury during construction activity.
Wt	WATERWAY OR STORMWATER CONVEYANCE			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.
	VI	EGETAT	IVE P	RACTICES
	PRACTICE	DETAIL	MAP	DESCRIPTION

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION		
1 10.111504						
Bf	BUFFER ZONE	4000		Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surroundir an area of disturbance or bordering streams		
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)	manana	Cs	Planting vegetation on dunes that are denue artificially constructed, or re-nourished.		
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedlings may not ha a suitable growing season to produce an erosion retarding cover.		
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.		
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)	A GO GO	Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.		
Ds4	DISTURBED AREA STABILIZATION (SODDING)		Ds4	A permanent vegetative cover using sods or highly erodable or critically eroded lands.		
Du	DUST CONTROL ON DISTURBED AREAS		Du	Controlling surface and air movement of dust on construction site, roadways and similar sites.		
FI-Co	FLOCCULANTS AND COAGULANTS		FI-Co	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.		
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)		Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.		
Ss	SLOPE STABILIZATION		Ss	A protective covering used to prevent erosic and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.		
Tac	TACKIFIERS AND BINDERS		Tac	Substance used to anchor straw or hay mulch by causing the organic material to bind together.		

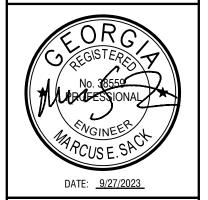
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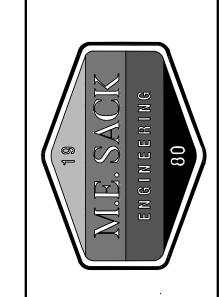
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EROSION CONTROL **DETAILS**

FILE NO: 2023-63

PLOT DATE: September 27, 2023